

ABSTRACT OF THE DISCLOSURE

A tunable Bragg grating method and apparatus. In one aspect of the present invention, a method according to an embodiment of the present invention includes directing an optical beam into a first end of an optical path having the first end and a second end disposed in a semiconductor substrate, reflecting a first portion of the optical beam having a first center wavelength back out from the first end of the optical path and tuning the optical path to reflect a second portion of the optical beam having a second center wavelength back out from the first end of the optical path. In one embodiment, the Bragg grating is tuned with a heater used to adjust a temperature of the semiconductor substrate. In another embodiment, charge in charge modulated regions along the optical path is modulated to tune the Bragg grating.